PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P4643.PC/PDW	FOR FURTHER ACTION	See Form PCT/IPEA/416

International application No. PCT/GB2005/000603	International filing date (day/month/year) 21.02.2005	Priority date (day/month/year) 19.02.2004

International Patent Classification (IPC) or national classification and IPC
G06F9/44

Applicant
QUALCOMM CAMBRIDGE LIMITED et al.

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

    a. ☒ *sent to the applicant and to the International Bureau)* a total of 7 sheets, as follows:

        ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

        ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

    b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

    ☒ Box No. I   Basis of the opinion

    ☒ Box No. II   Priority

    ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

    ☐ Box No. IV   Lack of unity of invention

    ☒ Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

    ☐ Box No. VI   Certain documents cited

    ☐ Box No. VII   Certain defects in the international application

    ☐ Box No. VIII   Certain observations on the international application

Date of submission of the demand 16.12.2005	Date of completion of this report 23.02.2006

Name and mailing address of the International preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Dieben, M Telephone No. +31 70 340-4440

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Box No. I   Basis of the report

1. With regard to the **language,** this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

4-23	as originally filed
1-3	received on 16.12.2005 with letter of 16.12.2005

Claims, Numbers

1-15	received on 16.12.2005 with letter of 16.12.2005

Drawings, Sheets

1/5-5/5	as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☒ The amendments have resulted in the cancellation of:
☐ the description, pages
☒ the claims, Nos. 16-18
☐ the drawings, sheets/figs
☐ the sequence listing *(specify)*:
☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing *(specify)*:
☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. II   Priority

1. ☐   This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:

☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).

2. ☐   This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

see separate sheet

Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	
	No:	Claims	1-15
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-15
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item II

The validity of the priority has not been considered because the ISA does not have in its possession a copy of the priority application or, where required, a translation of that earlier application. The IPER has nevertheless been established on the assumption that the relevant data (Rules 43bis.1 and 64.1) is the claimed priority date.

Re Item V

1. Reference is made to the following document:
    D1: US-A-5 694 561 (MALAMUD ET AL) 2 December 1997 (1997-12-02)

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-15 is not new in the sense of Article 33(2) PCT.

2.01 The subject-matter of claim 1 is not new as D1 discloses:

A method of generating a user interface for a device, the method comprising the steps of:

arranging a first plurality of user interface elements, each of the elements being associated with a defined region of the user interface (D1, Figure 14 A) *and the first plurality of user interface elements* (D1, Figure 14B, window A; Figure 14C, windows B+D) *being associated with a first hierarchical level* (D1, col 16, lines 1-24, "z-order position) *of the user interface* (D1, Figure 14 A);

arranging one or more further pluralities of user interface elements, each of the elements being associated with a defined region of the user interface and the or each further plurality of user interface elements being uniquely associated with a single hierarchical level of the user interface, the or each level of the user interface occupying a lower hierarchical position relative to the first hierarchical level (D1, Figures 14A, 14B, 14C); *the device generating the user interface by*

i) rendering the user interface elements associated with the first hierarchical level of the user interface (D1, col 16, lines 1-24,"the z-order is used by the windows system to determine the order in which the windows should be drawn on the display")*; and*

ii) rendering the user elements associated with subsequent lower hierarchical level(s) of the user interface (D1, col 16, lines 1-24,"the z-order is used by the windows system to determine the order in which the windows should be drawn on the display")

*wherein if the device renders a user interface element that is associated with a
defined region of the user interface then it will not render a further user interface
element that is associated with that defined region of the user interface* (D1, implicit
from Windows and from Figure 14A, After rendering window A the renderer will not
render the parts of windows C, B and E which are obscured by window A).

2.02 The subject-matter of claims 8 and 9 is not new. The objections made to method
claim 1 apply mutatis mutandis to corresponding subject-matter of data carrier claim
8 and device claim 9.

2.03 Dependent claims 2-7 and 10-15 do not contain any features which, in combination
with the features of any claim to which they refer, meet the requirements of the PCT
in respect of novelty, see document D1. and the corresponding passages cited in the
search report.
All features are common manipulations of (groups of) user interface elements or
windows within a graphical user interface environment such as the one disclosed in
D1.
Ad claims 2,4: (D1, col 7, lines 25-42, "adding an icon or a window to an already
existing project")
Ad claim 3: (D1, implicit, adding a project)
Ad claim 5: (D1, implicit, closing or deleting one or more elements in a project)
Ad claim 6: (D1, implicit, closing or deleting an existing project)
Ad claim 7: (D1, implicit, closing or deleting all elements from an existing project)
Ad claims 10-15: The objections made to the subject-matter of claims 2-7 apply
mutatis mutandis to subject-matter of claims 10-15.

3   The following remarks are furthermore made:

3.01 The part of the application concerned with partial customization or the combination of
user rights and hierarchical levels is at present not relevant since it is not claimed.

3.02 With respect to said partial customization it is noted that the well-known operating
system MS-WindowsTM version 2000, discloses:
A background or desktop which has a fixed position in the z-order which can not be

changed by a user.

A function *SetForgroundWindow* which prevents other applications to make a foreground change.

Window properties *AlwaysOnTop, Closable* and *Moveable* which allow a window to stay in the foreground, not being movable nor closable and not having the focus at the same time. Hence, this gives the user the possibility to work with other visible windows. See for example the MS-Windows™ Task Manager's property 'Always on top'.

MS-Windows™ version 2000 was known before the priority date of this application.

3.03 It is furthermore noted that keeping a particular user interface element in the foreground for reason of branding or presentation relates to mere presentation of information (Rule 67.1(v) PCT) and would not contribute to inventive step.

LAYERED USER INTERFACE

FIELD OF THE INVENTION

5   The present invention relates to user interfaces and in particular to the user interface for devices for use with a mobile communications network.

BACKGROUND OF THE INVENTION

10

There is now a significant market in downloading images, ringtones, wallpapers, etc., to enable users to modify the appearance of their mobile phones. For commercial reasons it is desirable for mobile network operators and/or content
15   providers to be able to have some control over the user interface that will be displayed on the screen of a mobile device. Conventional methods for implementing user interfaces lack the flexibility and configurability that enable such schemes to be implemented.
20

SUMMARY OF THE INVENTION

According to a first aspect of the present invention, there is provided a method of generating a user interface for a device,
25   the method comprising the steps of: arranging a first plurality of user interface elements, each of the elements being associated with a defined region of the user interface and the first plurality of user interface elements being associated with a first hierarchical level of the user interface;
30   arranging one or more further pluralities of user interface elements, each of the elements being associated with a defined region of the user interface and the or each further plurality of user interface elements being uniquely associated with a single hierarchical level of the user interface, the or each

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level of the user interface occupying a lower hierarchical
position relative to the first hierarchical level;the   device
generating the user interface by: i) rendering the user
interface elements associated with the first hierarchical level
5   of the user interface; and ii) rendering the user elements
associated with subsequent lower hierarchical level(s) of the
user interface, wherein if the device renders a user interface
element that is associated with a defined region of the user
interface then it will not render a further user interface
10   element that is associated with that defined region of the user
interface.   According to a second aspect of the present
invention there is provided a data carrier comprising computer
executable code for performing the above-described method.

15   According to a third aspect of the present invention, there is
provided a device comprising a display means, a user interface
being displayed by the display means, the user interface
comprising a plurality of hierarchical levels, in use, the
device: arranges a first plurality of user interface elements,
20   each of the elements being associated with a defined region of
the user interface and the first plurality of user interface
elements being associated with a first hierarchical level of
the user interface; arranges one or more further pluralities of
user interface elements, each of the elements being associated
25   with a defined region of the user interface and the or each
further plurality of user interface elements being uniquely
associated with a single hierarchical level of the user
interface, the or each level of the user interface occupying a
lower hierarchical position relative to the first hierarchical
30   level; the device, in use, generating the user interface by: i)
rendering the user interface elements associated with the first
hierarchical level of the user interface; and ii) rendering
the user elements associated with subsequent lower hierarchical
level(s) of the user interface, wherein if the device renders a

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user interface element that is associated with a defined region of the user interface then it will not render a further user interface element that is associated with that defined region of the user interface.

5

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a schematic depiction of a system incorporating the present invention;

10　　Figure 2 depicts in greater detail the structure and operation of server;

Figure 3 shows a schematic depiction of the software for the mobile devices;

Figure 4 shows a schematic depiction of four hierarchical

15　　planes; and

Figure 5 shows a schematic depiction of a device that comprises a user interface according to an embodiment of the present invention.

20　DETAILED DESCRIPTION OF THE INVENTION

The invention will now be described by way of illustration only and with respect to the accompanying drawings, in which Figure 1 shows a schematic depiction of a system incorporating the

25　present invention. The system comprises server 100, content toolset 200, mobile devices 300, operational support systems (OSSs) 700, content feeds 500 and user interface (UI) sources 600. In use, the server 100 communicates content data and UI data to the mobile devices 300, 301, ..., each of which comprise

30　software package 400. The server 100 interfaces with OSSs 700, with the OSSs being those conventionally used to operate mobile networks, for example billing, account management, etc. The server 100 further interfaces with the content toolset 200: the content

CLAIMS

1.   A method of generating a user interface for a device,
the method comprising the steps of:

      arranging a first plurality of user interface elements,
each of the elements being associated with a defined region
of the user interface and the first plurality of user
interface elements being associated with a first hierarchical
level of the user interface;

      arranging one or more further pluralities of user
interface elements, each of the elements being associated
with a defined region of the user interface and the or each
further plurality of user interface elements being uniquely
associated with a single hierarchical level of the user
interface, the or each level of the user interface occupying
a lower hierarchical position relative to the first
hierarchical level; the device generating the user interface
by

      i)   rendering the user interface elements associated
with the first hierarchical level of the user interface; and

      ii)   rendering the user elements associated with
subsequent lower hierarchical level(s) of the user interface

      wherein if the device renders a user interface element
that is associated with a defined region of the user
interface then it will not render a further user interface
element that is associated with that defined region of the
user interface.

2.   A method according to claim 1, comprising the further
step of adding one or more user interface elements to one or
more of the plurality of user interface elements.

3.   A method according to claim 1, comprising the further step of adding an additional hierarchical level to the user interface.

5

4.   A method according to claim 3, comprising the further step of associating a plurality of user interface elements with the additional hierarchical level.

10   5.   A method according to claim 1, comprising the further step of removing one or more user interface elements from one or more of the plurality of user interface elements.

6.   A method according to claim 1, the method comprising the
15   further step of removing one of the hierarchical levels from the user interface.

7.   A method according to claim 6, the method comprising the further step of deleting the plurality of user interface
20   elements associated with the removed hierarchical level.

8. A data carrier comprising computer executable code for performing the method of any of claims 1 to 7.

25   9.   A device comprising a display means, a user interface being displayed by the display means, the user interface comprising a plurality of hierarchical levels, in use, the device:
        arranges a first plurality of user interface elements,
30   each of the elements being associated with a defined region of the user interface and the first plurality of user interface elements being associated with a first hierarchical

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level of the user interface;

        arranges one or more further pluralities of user interface elements, each of the elements being associated with a defined region of the user interface and the or each
5   further plurality of user interface elements being uniquely associated with a single hierarchical level of the user interface, the or each level of the user interface occupying a lower hierarchical position relative to the first hierarchical level; the device, in use, generating the user
10   interface by

        i)   rendering the user interface elements associated with the first hierarchical level of the user interface; and

        ii)   rendering the user elements associated with subsequent lower hierarchical level(s) of the user interface
15   wherein if the device renders a user interface element that is associated with a defined region of the user interface then it will not render a further user interface element that is associated with that defined region of the user interface.

20

10. A device according to claim 9 wherein, in use, the device adds one or more user interface elements to one or more of the plurality of user interface elements.

25   11. A device according to claim 9 wherein, in use, the device adds an additional hierarchical level to the user interface.

12. A device according to claim 11 wherein, in use, the
30   device associates a plurality of user interface elements with the additional hierarchical level.

13. A device according to claim 9 wherein, in use, the device removes one or more user interface elements from one or more of the plurality of user interface elements.

5   14. A device according to claim 9 wherein, in use, the device removes one of the hierarchical levels from the user interface.

15. A device according to claim 14 wherein, in use, the 10   device deletes the plurality of user interface elements associated with the removed hierarchical level.

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